

Z88 EPROM

February 1991

Vol.5 No.1

Contents

Page

Club Addresses	2
Editorial	3
Newslines	4
Workshop Day 1991	5
Helpline	11
Members' Letters	12
Queries, Hints & Tips	13
Index - Volume 4	14
Competition Results	17
Small Ads and Swapshop	34

Club Addresses

All articles for **Z88 EPROM** and any membership matters (**except** Software Library) should be sent to:

ROY WOODWARD
Z88 USERS' CLUB
68 WELLINGTON STREET
LONG EATON
NOTTINGHAM
NG10 4NG

All requests for software from the Club Software Library, (**but not** special offers), items for inclusion in the Library, and EPROMs for erasure should be sent to:

IAN BRABY
THE SOFTWARE LIBRARY
Z88 USERS' CLUB
3/8 JENNER ROAD
GUILDFORD
SURREY
GU1 3PL

Please note that the **Library** address is the one to use when sending for a list of Library programs - this list is **not** available from the main Club address. Be sure to enclose £1 plus a SAE for the list.

The Club **CLI** Library is run by:

MICHAEL HEY
18 WOODSIDE ROAD
SANDIACRE
NOTTINGHAM
NG10 5GP

Any **CLI's** for the Library, requests for **CLI's** and the list of **CLI** programs (42p in stamps) should be sent to Michael Hey.

ALWAYS include your Membership Number with any correspondence. This is not just to be awkward - now the Club is large it can be very time-consuming searching the database for a member's number. Your number is printed on the address label of each issue of **Z88 EPROM**. Please be sure to enclose a stamped-addressed envelope with anything needing a reply.

Editorial

First, the Spares situation. At the time of writing this Editorial, CCL tell me that they have had a quantity of keyboard membranes delivered, and I should have these delivered within a few days. If this actually goes to plan, it means that I will be able to satisfy my outstanding keyboard requests, (some 25 of them!) and delivery of replacement keyboards will be back to normal. The new problem appears to be with the Z88 display - I am now out of stock of these, as are CCL. The bad news is that CCL cannot give a delivery date for displays. I realise that if you have ordered a display, it is because your old one is broken, and thus your Z88 is unusable. Sympathise as I do, beyond sympathy there is little I can offer at present. Rest assured that if you have one on order, it will be despatched as soon as I get stock. When will this folly end, I ask myself?

On a more positive note, I have set the date for the next Workshop Day. Saturday 1st June is the date, and the venue will once again be the Stantonbury Campus at Milton Keynes. With a host of resident experts offering advise on a myriad of Z88 topics, it is the ideal place to air your problems, and pick up a host of new hints and tips.

I must stress that the Workshop will help you whatever your level of expertise in the Z88 - from absolute beginner upwards. Just because you are not an expert, don't be put off coming to the Workshop - you probably have more to gain than the rest of us! See the article later in this issue for more details.

After the launch of the Application Library in the last issue I had a call from Talent+, distributor of Wordmongers' software, pointing out that we might cause some confusion by calling our service the "SuperChip Service", as Superchip is the term used by Wordmongers to describe their compilation chips. Not wishing to cause upset or further confusion, Steve Marsh has agreed that we should drop the term "SuperChip", and from now on the compilation service will be known as "The EPROM Service".

Lastly, yet another blunder on my part! Long standing members may have noticed that the previous issue did not include the index for volume 4, as is normal for the last issue of the year. I apologise for this omission, and have put it right in this issue.

You might also be interested to know that there is now a full index available as a separate booklet, covering all issues of Z88 EPROM up to the end of volume 4. This costs £1, and is available from the Club Address on page 2.

Newslines

TK COMPUTERWARE have managed to obtain fresh stocks of the XOB disk drive system. This disk system has been available for a couple of years, and is based on the Tandy portable disk drive, giving 200k of file storage on a 3.5" floppy disk. The system was fully reviewed in Z88 EPROM Vol 3 No 4. Stocks are limited, and the current price for the system is £210. Contact TK on 0303 812801 for more details.

SQUEEZ`88 IS NOW AVAILABLE! This new application from Rakewell was publicly launched at the recent All Formats Show on February 2nd, where sales were brisk.

Coming on the obligatory 32k EPROM with a hefty 40 page A5 manual, Squeez`88 is an excellent utility program which allows you to compress files in RAM on your Z88, in order to make the best use of your available memory. Squeezed files show a RAM saving of anything between 15% and a massive 40%, depending on the content of the file. Once a file has been squeezed, it can be saved in this new compact form to EPROM, or sent to another machine using a link program. In its squeezed form it will obviously take up less space on the EPROM, or in the case of the link to another machine, the file transfer will obviously be quicker because of the smaller file size.

As well as the squeeze/unsqueeze functions, there is also an option which allows you to encrypt a file when it is squeezed, with a user password for the encryption key. To unsqueeze the encrypted file you would need to input the same password, otherwise the file is inaccessible and totally scrambled!

Squeez`88 also allows you to view any file on the Z88 without having to load it into an application - useful for quickly sorting out those files with confusing filenames. The COPY function, something which is the cause of much confusion among users, has been re-implemented in a more advanced form within Squeez`88 -

it now allows you to freely copy single or multiple files between directories and devices with considerable ease.

There will be a full review of SqueeZ'88 in a forthcoming issue, but those of you who want further information should contact Rakewell on 0296 630617. SqueeZ'88 costs £39.95 + £2.00 postage + VAT.

IN THE SAME VEIN as the Superchips from Wordmongers, Ranger Computers have just announced their Rangerworld ROM. This is a single 128k ROM with 4 Ranger applications (Rangerlink, Diskfiler, Vision/L, Space) plus PC Link, EP-Fetch, and Rakewell's SqueeZ'88. While EP-Fetch, Rangerlink and Diskfiler will be well known to most people, the others need some expansion. Space is an application which displays the space remaining in each Z88 RAM and EPROM slot, and Vision/L is a cut-down version of the Vision100 VT-100 terminal emulator.

The Rangerworld ROM is competitively priced at £150 + VAT. There is an upgrade path for people who already have copies of any of the featured Ranger or Rakewell applications, further details of which can be obtained from Ranger on 0604 791064.

Workshop Day 1991

It's Workshop time again! Following on from the success of the Workshop last October, I have been prompted to organise another for Saturday 1st June 1991. The venue will once again be the Stantonbury Campus at Milton Keynes - this venue definitely proved popular last year, as it provides just the right mix of space and facilities. Tickets are priced at £3.50 including VAT, please send payment with your order to the Club Address on page 2, and remember to quote your membership number.

The idea of a Workshop is simple - it is **the** place to get advice and help with problems with your Z88, whatever your level of expertise. This will normally come from informal Workshop Groups, set up during the day to talk about a variety of Z88 topics, and each one led by an expert in that field. The Workshop is also the ideal place to get help with any specific hardware or software problems you might have.

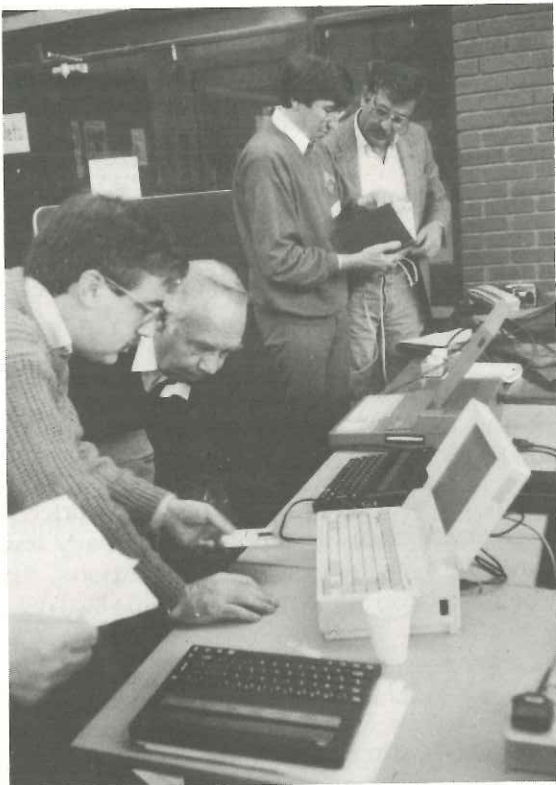
Reacting to the feedback from the last Workshop, this time the Workshop Groups will be timetabled, so no one should miss anything they wish to attend.

**PHOTOS FROM
THE LAST WORK-
SHOP DAY AT
MILTON KEYNES:**

On the right the photo shows the Software Library corner, which was busy all day long with people selecting Library software.

Below is a more general shot of the trade stands area - the stand in this particular photo is Ranger Computers Ltd.

Thanks to
Fred O'Hare
for the photos



In addition to the Workshop Groups, there will also be a variety of trade stands, selling everything imaginable for the Z88. Ian Braby will be there with the Software Library, and Michael Hey with the CLI Library, and yours truly will be there with binders, back issues and spares (always assuming CCL have delivered by 1st June!). Unfortunately Steve Marsh cannot attend this time due to prior commitments.

The following companies are set to put in an appearance:

Cambridge Computer Ltd
Colton Software - authors of PipeDream
Ranger Computers Ltd - Z88 hardware and software
Rakewell Ltd - authors of "Z88 Magic"
Richard Russell - author of BBC BASIC
Wordmongers Ltd - Z88 software specialists
S & S Computer Advice - educational specialists.

Below is a provisional list of Workshop Groups which will be running on the day. These will actually be timetabled, and you will be given a schedule on arrival at the Workshop. If you can suggest another Workshop Group title which would be of general interest, or if you feel that you would like to run a Workshop group, please contact me by post before the event.

zBASE for Absolute Beginners
File Transfer
PipeDream
zBASE
Writing Z88 Applications
The PrinterEd and printers
General Z88 Problems (x2)
BBC BASIC
Using the CLI

Once again, entry is by advance ticket only, priced at £3.50 per ticket. Please send your remittance to the Club Address on page 2, together with your Membership Number. You will be sent your ticket, and some information which gives details of how to find the venue, details of local hotels etc. I realise that in February that the 1st June seems a terribly long time away - in fact it is only just over three months to the Workshop date, so please, don't delay, send for your ticket immediately, to give me a better idea of the turnout for this next event.

RANGER

COMPUTERS LTD

The Z88 Specialists RANGER WORLD

RangerLink • Diskfiler • Vision/L • Space • EP Fetch • PC Link • Squeeze

At last! 5 Ranger applications, plus the NEW Rakewell Squeeze, in one EPROM for only £150.00 + VAT!

- RangerLink**- High performance PC communications for the PC - includes PC cable (specify 9 or 25 pin) and PC program (Specify 5.25" or 3.5" disk)
- Diskfiler** - Z88 software for the PC-compatible RangerDisk.
- Vision/L*** - a general purpose version of our popular VT100 terminal emulator, provides 24 line scrolling screen and file capture, ideal for mailbox applications.
- Space*** - The only application that displays the space remaining in each Z*88 RAM and EPROM slot.
- EP Fetch** - from the Z88 User Group library, allows Filer-like access to EPROM files.
- Squeeze** - From Rakewell, the latest Z88 application. Gives password protection and file compression. See Rakewell advertisement elsewhere in this issue for details.

IMPORTANT SAVINGS

Existing owners of RangerLink, Diskfiler, PC Link and Squeeze can save £20.00 + VAT for each program EPROM returned at the time of their RangerWorld order, for a maximum saving of £80.00 + VAT! Please note that each EPROM (and cable/disk if appropriate) MUST be returned with the order - this offer is not retrospective.

To order your RangerWorld, simply send £175.38 (including UK postage and VAT) or quote your Visa or Access number with expiry date. For each program returned, deduct £23.00.

* These programmes are only available on RangerWorld.

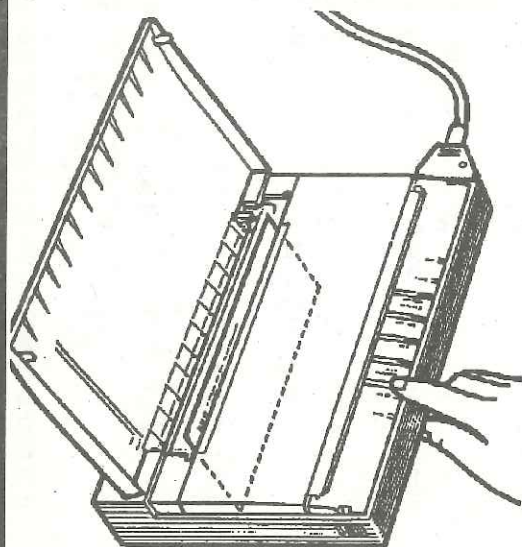
RangerDisk for Z88 User Club Members

RangerDisk - 3.5", 720 K PC compatible disk drive for Z88 - transforms Z88 into a truly practical personal computer. Following negotiations with the Z88 User's Club, we are now pleased to announce a special price arrangement for members of the club for a limited period only.

To qualify for the special price of only £365.00 + VAT (normal price £450.00 + VAT), you must be a current member of the User's Club and be purchasing RangerDisk for your personal use. Proof of current membership of the User's

Club is required with your order. This offer expires 31 March 1991 and is subject to availability of stock, so please do not delay.

To order your RangerDisk, simply send either £424.93 (including parcel post and VAT) or £432.40 (including next day delivery to most of UK and VAT). P.S. This offer includes the User Club library on disk FREE OF CHARGE.



A laser printer in your pocket? Well, not quite, but the new **Canon BJ10e bubble jet printer** has resolution as good as some lasers and prints real black on white, banishing the fuzzy grey on white of older portable printers to the dustbin of history!

BJ10e has a variety of built in fonts and can be used with both Z88 and desktop PC's. An optional sheet feeder holds up to 30 sheets for long documents.

BJ10e is now priced at only £299.00 + VAT and is available from stock. The optional sheet feeder is £54.00 + VAT and the battery pack is £39.00 + VAT. Shipping is £4.50 + VAT (parcel post) or £11.00 + VAT (next day).

RANGERLINK

The RangerLink high performance PC communications package is available as an upgrade for PC Link II user. The existing PC Link II programs are returned, together with the file conversion facilities.

RangerLink provides file transfer at up to 4 times the speed of PC Link II and batch file transfers. To order your upgrade to RangerLink, simply return your existing PC Link II Eprom and Disk together with £37.38 (£30 + £2.50 p&p + VAT).

OTHER PRODUCTS

Sorry, no room available this month! However, our latest newsletter and price list are available. Please write or phone for your FREE copy.

Please note that all prices exclude VAT. We accept official orders from qualifying UK companies and government organisations. All others, cheque or P.O. with order please. Alternatively, you can order by telephone quoting either Visa or Access (Mastercard) number. Next day delivery available on all items, subject to stock, £11.00 in most of UK. Please call for freight costs to Scotland, offshore or overseas.

Ranger Computers Ltd
The Innovation Centre
Boughton Green Road
Moulton Park
Northampton NN2 7AH



Telephone: (0604) 791064
Fax: (0604) 791114
Telex: 94017588 TBIC G

SQUEEZ~88

AVAILABLE NOW

SQUEEZ~88 WILL GIVE YOU MORE MEMORY ON YOUR Z88 FOR FILES.

Written as an Application (like the DIARY and PipeDream) with Squeez~88 you can:-

- Compress files on your RAM pack so that you release memory.
- Expand files when you want to work with them.
- Password Encryption option - Scramble files whilst Squeezing and get them back only if correct Password is selected.

- Look at any PipeDream files without loading them into PipeDream.

- Copy files to different directories, easier to use than the existing Filer command.

- PC Compatible - files squeezed on the Z88 can be unsqueezed (and visa-versa) on a PC Compatible computer. This gives you shorter file transfer times as the squeezed files are smaller than the originals

Squeez~88 will give up to 40% compression¹ on any type of file in your 128K Ram Pack (or Eprom Pack), so it would now be able to store 320K of files on a 512K Ram Pack you could store up to 1.2MBytes. or on a 1M Ram Pack you could store up to 2.5MBytes!!

**Price - £39.95 excluding VAT - Send £47.94
(including £2.00 p+p) TODAY**

Rakewell Ltd, FREEPOST MK11000, Blitchley, Milton Keynes. MK1 1YX England. 140% is given as an example only. Compression of 15% to 49% have been achieved on a PipeDream file - the amount of compression will depend on the file.

• Squeez~88 is the subject of a trademark.

Helpline

CLI Files - Contact Michael Hey by post only at: 18 Woodside Road, Sandiacre, Nottingham. NG10 5GP

Z88 to Amstrad PCW Link - Please write in the first instance to: Mr A West, 16 Southway, Burgess Hill, Sussex. RH15 9ST.

zBASE, CLI and all Wordmongers products except TX and Comms software - Contact Jason Crook (ex of wordmongers) at 4 Salisbury Close, Princes Risborough, Bucks. HP17 0JF. Telephone 08444 7075. I will also write to order in zBASE.

zBASE - Help on commands and programming. I can accept info/programs on paper. EPROM, zTape cassettes or IBM disk. Contact Robin Jarvis, 27 Gloucester Road, Waterlooville, Hants. PO7 7BJ.

Z88 to Amstrad CPC Link - Contact Duncan W. Kennedy at 32 Otterston Grove, Dalgety Bay, Fife. KY11 5PA.

BASIC Programming - Contact Richard Russell at 59 Campbell Road, Gravesend, Kent. DA11 0JZ.

Interfacing Z88 to various hardware - Mac, BBC, PADs, also UNIX and C experience - Contact J.P. Knight Email JANET on jpknight@suk.ac.lut.suna, or snail mail during term time to Room 66, Hazlerigg-Rutland Hall, Loughborough University of Technology, Ashby Road, Loughborough, Leics, LE11 3TZ.

PipeDream/Diary/General - Contact Keith Winsor at 13 Swansea Road, Reading, Berks. RG1 8EY. Or Telecom Gold 82:TLR1747.

Z88-PCW Link - Using C-Port program. Please contact David Prestage at 47 Knighton Road, Otford, Sevenoaks, Kent. TN14 5LD.

Anything Educational - Please contact Bob Shore, 8 Anchor Close, Hathern, Leics. LE12 5HP. Telephone 0509 842670.

Z88 - Atari ST Links - Please contact Ian Salmon, 18 Fillioll Close, E. Hanningfield, Essex. CM3 8UY.

Machine-code Programming - Please contact Richard Smith, 29 Sandhouse Crescent, Scunthorpe, South Humberside, DN16 1JF.

Printer Setups - Please contact David Stewart at 44 Margetts, Hemingford Grey, Huntingdon, Cambs. PE18 9EP. If you have any queries concerning general printer problems, eg. correct use of cables, how to connect up the printer, printer code language, understanding the information in the printer handbook, etc. please write to David. He will try and include the answers in a series of fact sheets covering as many of these problems as possible.

Members' Letters

J. E. Madge (1329) Taunton, Somerset.

Dear Roy,

I thought you, your readers and advertisers might like to know of the enormous response I had to my advertisement in the October 1990 issue for various Z88 items.

The telephone began ringing at 7.30am on the Friday of publication, and continued through Saturday, Sunday, Monday, Tuesday and Wednesday! My wife and I started counting the calls after we had received about 20 - in all I think about 60-70 Z88 Eprom readers must have contacted us! What a marvellous response!

I hope to get back to being a Z88 user again in the future, but in the meantime, can anyone tell me the correct pronunciation of the word "Eprom"? About half those who contacted me described the magazine as "Z88 Eeprom" (as in "we"), while the rest shortened the "eeee" sound as in "get".

(My own pronunciation is the former, but as to the correct way I'm not sure - my dictionary does not include such computer terms. Out of interest, the correct way to write it is in all capitals ("EPROM"), as it is actually an acronym made up from the initial letters of the name of a type of computer memory - Electrically Programmable Read Only Memory. - Roy)

Tony Hall (2506) Uckfield, East Sussex.

Dear Roy,

I expect few members are any longer surprised by the ineffective sales and marketing methods lately employed by CCL, but here is an example of how easily their prospects are being eroded in an area which they claim to be important to them, education.

I am the Head of English at a large secondary school in East Grinstead. The department already runs about a dozen computers, mainly PC's and various BBC models, and I have long thought it important to branch out into the purchase of lap-tops, mainly to cater for those with Special Needs.

When the funds became available to buy our first machine, I naturally ordered a Z88, having used one of my own for some years. Despite all the attempts of an enthusiastic and resourceful dealer, it took months even to acquire one. I have never seen any attempt by CCL to target schools with advertising let alone mail-shots to point out the particular virtue of the machine.

These facts were brought forcibly home to me in the last few weeks, when I received a well-produced pack of material from Microwriter offering the Agenda at a substantial discount. Senior staff, who are not noticeably computer literate, were impressed enough to take an interest and within a fortnight Microwriter had sent a representative to give a frankly impressive demonstration to those teachers, from many departments, who were considering such a machine.

Not only was the demonstration geared specifically to our needs, the financial package and technical support were hard to resist. Additionally, the build quality and documentation are significantly better than that of the Z88. Perhaps not surprisingly the school has bought one Agenda for evaluation purposes, but I think it will be the first of several.

I am still firmly convinced that the Z88 is a better computer, despite some special features boasted by the Agenda. However, it will become difficult for me to justify my opinion to the layman unless things improve.

As a footnote, I now learn that a local Toshiba dealer is placing a caravan full of their lap-tops and staff at my nearest teachers' centre one day soon to demonstrate and give advice. Already West Sussex Advisory teachers are being issued with Toshibas by the local authority.

Finally, and on a more positive note, I would like to thank Bob Shore for all his time and goodwill in helping me with the Z88 at school.

Queries, Hints & Tips

I read with interest the Comms Comment articles by Simon Phipps (0221), and was quite keen to have a go. I don't have a modem for the Z88 but I do have access to a Tandata Tm512Tp modem, attached to a BBC computer. I tried, unsuccessfully, to connect with the bulletin boards mentioned using Comunitel software,

realising that this is only suitable for Viewdata type boards. I then tried to use the inbuilt TERMINAL software but got nowhere, so now I'm stuck. Unfortunately the articles assume some knowledge of Comms which I do not have, and so I have reached a dead end. The information from the BBC MASTER Reference Manual, Tandata Modem Manual and the Z88 User Manual have all been of little use, as they also appear to assume some knowledge of the subject. (Or am I being dim?)

So, can anyone please help with the following:

1. Can the Tandata Modem be connected to the Z88? It has two output sockets - one 25D RS232 and one TTL domino.
2. If so, will the terminal software drive it?
3. If not, can the BBC/Tandata combination be used to download software or communicate with other users?
4. What does VT52 etc. mean?

Index - Volume 4

1200P modem problems : 4.4.8 : 4.6.16

1M EPROM - 4.10.4

1M RAM card : 4.3.4

ADAM : 4.4.4

Amstrad PCW8512 : 4.7.24

Analogue-Digital converter : 4.4.4

Application Library : 4.10.11

Bar code reader : 4.5.3

BASIC Patch - Dump patch : 4.6.25

Book Reviews:

Books for Christmas : 4.9.25

Developers' Notes : 4.4.24

The Cuckoo's Egg : 4.5.28

Using Your Z88 : 4.7.22

Z88 Dabhand Guide : 4.1.22

Z88 Magic : 4.1.20

Z88 PipeDream - A Dabhand Guide : 4.9.17

Z88 Real Power Computing : 4.1.16

Bulletin Boards : 4.1.27 : 4.2.12 : 4.2.32 : 4.10.6

Cambridge Computer address : 4.9.4
CIX : 4.2.32
Cleaning keyboard : 4.2.11
CLI : 4.3.12 : 4.4.21 : 4.5.17
CLI Files : 4.2.14
CLI from BASIC : 4.3.12
CLI from BASIC Pt 2 : 4.4.21
CLI from BASIC Pt 3 : 4.5.17
Comdex, A Letter from : 4.10.14
Countz : 4.2.4
Cuckoo's Egg - review : 4.5.28

Daisywheel typewriters : 4.10.25
Data Logger : 4.7.4
Dealer List - Part 3 : 4.1.24
Developers' Notes - review : 4.4.24
Diconix 150+ Printer - review : 4.5.26

Eazy Money - Review : 4.7.14
Education : 4.4.9
EPROM Eraser kit : 4.4.7
EPROMs - reading : 4.2.17
Event Control System - Review : 4.1.28

Fidonet : 4.10.6
Funkey.bas : 4.6.23

Golf - review : 4.8.23
Guardian : 4.9.6

Hardcase : 4.4.4

Hardware Reviews:
Diconix 150+ Printer : 4.5.26
Personal 80 Printer : 4.2.27

Insert at slot bug : 4.1.9

Keyboard cleaning : 4.2.11 : 4.6.26

Lexlink : 4.6.7
Library Fees/ Postal Rates : 4.5.30
Library List : 4.6.32
LIST IF : 4.6.26
Locofont file transfer : 4.7.24

Maclink - review : 4.5.11

Milez : 4.2.4

Multi-field searches in PipeDream : 4.1.13

New Sub Rates : 4.8.4

Olympia Carrera : 4.10.25

Overheating problems : 4.8.17

Parallel cable mod : 4.3.6

Password protection - Guardian : 4.9.6

Personal 80 Printer : 4.1.5 : Review : 4.2.27

Phonez : 4.2.4

PipeDream - Dabhand guide : 4.8.5

Prestel : 4.2.12

RAM.- : 4.6.23 : 4.7.12 : 4.9.11

RAM.- deleting files : 4.2.13

Rangerlink - review : 4.8.30

Reading EPROMs : 4.2.17

Software Developer's Guide - summary : 4.9.27

SqueezeZ88 : 4.6.6

Software Reviews:

Eazy Money : 4.7.14

Event Control System : 4.1.28

Golf : 4.8.23

Maclink : 4.5.11

Rangerlink : 4.8.30

Vision 100 Terminal Emulator : 4.3.31

Tandy WP-2 - 4.7.4

Toshiba Expresswriter 301 : 4.3.6

Using your Z88 - review : 4.7.22 : summary : 4.9.27

Vision 100 Terminal Emulator : 4.3.31

Which? report : 4.9.5

Workshop : 4.7.3

Z88 BASIC Reference Manual - summary : 4.9.27

Z88 Computing : summary : 4.9.25

Z88 Dabhand Guide - Review : 4.1.22 : summary : 4.9.25

Z88 Dealer List - Part 3 : 4.1.24

Z88 Fax News : 4.2.4

Z88 Magic - Review : 4.1.20 : summary : 4.9.25

Z88 PipeDream - A Dabhand Guide - Review : 4.9.17
Z88 PipeDream - A Dabhand Guide - summary : 4.9.26
Z88 Portable Computing - summary : 4.9.25
Z88 Real Power Computing - Review : 4.1.16
Z88 Real Power Computing - summary : 4.9.26
zBASE : 4.7.14
zBASE programming : 4.5.13
zBASE Programming, pt 2 : 4.7.29

A combined index of Z88 EPROM volumes 1-4 is available from the Club address on page 2, price £1.

Competition Results

The competition for ideas for the new, improved Z88 drew quite a large number of entries - only to be expected when you consider that £300 worth of prizes were on offer.

All the entries were passed on to Cambridge Computer during December, and they have carefully looked at the overall content of all the entries, and analysed them for any emerging trends in what people feel they want from an improved machine.

CCL have chosen three winners, which over the following pages are reproduced in their entirety. I should point out that the three winners are not placed in any order of merit - if you like there were three first prizes in this competition, each of £100 worth of Z88 accessories.

The winners were:

R.B. Jordan & K.P.O'Donnell, (2116) of the New Zealand Ministry of Agriculture and Fisheries;

P.I. Nicholson (1396) of Dunvegan, Isle of Skye; and

Steve Pepper (0184) of Harrogate, North Yorkshire.

The three winners have been notified, and CCL will be writing to them to explain how to claim their prizes. May I say on behalf of both CCL and the Club that the standard of entries was extremely high, and the considerable effort that was obviously applied to the entries is much appreciated. I will keep you posted on any developments from CCL on the new machine.

TK COMPUTERWARE

The Z88 SPECIALIST

STONE STREET, NORTH STANFORD, ASHFORD, KENT TN25 6DF
 TEL: 0303 812801 TELEX: 966676 PMFAB G FAX: 0303 812892

HARDWARE:

£

COMPUTER:	Z88 — Computer	230.00
	Z88 — All in One Pack	299.00
	Z88 — PC Pack	320.00
	Z88 — MacPack	345.00
RAM Packs	32k	20.00
	128k	50.00
	512k	200.00
EPROM Pack	32k	20.00
	128k	50.00
ADAPTORS:	Z88 — Amiga	35.00
	— Amstrad PCW (C-Port s/ware)	35.00
	— Archimedes	35.00
	— Atari ST	35.00
	— BBC	25.00
	— Macintosh	60.00
	— RangerLink	57.50
	— Mains	10.00
	— PC 2 5.25" disc	35.00
	— PC 2 3.50" disc	35.00
	— QL (BT connector Ser1)	25.00
— QL ('D' connector Ser1)	27.00	
SUNDRY:	Cambridge Topper	10.00
	Carry Case	10.00
	Centronics Interface	30.00
	Disc Drive 3.5" 720k MSDOS compatible	520.00
	Disc Drive 3.5" 200k Portable	210.00
	Eprom Eraser	40.00
	Modem (Cambridge)	170.00
	Modem Cable	12.00
	RS 232 lead	10.00
	Z88 AT cable D9-D9	12.00

SOFTWARE:

£

DATABASE:	Z-Base	Wordmongers	69.00
FINANCE:	Eazy Money	Wordmongers	69.00
	Eazy Money Disc. & U/G for zBASE	Wordmongers	20.00
GAMES:	Golf	Wordmongers	25.00
	Scrabble	Wordmongers	20.00
	Withered Toad	Wordmongers	25.00
PIPEDREAM:	Pipedream - Archimedes	Colton	165.00
(Other M/c)	Pipedream - PC (3.5"/5.25" d)	Colton	114.00
	Pipedream - PC Spelling Checker	Colton	50.00
PLANNING:	ThinkZ	Wordmongers	50.00
SPELLING:	Spellmaster	Computer Concepts	59.00
STREAMER:	Z-Tape	Wordmongers	50.00
SUPERCHIPS:	Superchip	Wordmongers	75.00
	Superchip 1	Wordmongers	110.00
	Superchip 2	Wordmongers	100.00
	Superchip 3	Wordmongers	130.00
	Superchip 4	Wordmongers	150.00
TERMINAL:	Z-Term - General purpose	Wordmongers	50.00
TYPING:	T-Touch	S & S Computer	40.00
UTILITIES:	SqueeZ'88	Rakewell	46.00

BOOKS:

	Z88 Dabhand Guide	Dabs	16.00
	Z88 Computing	Ian Sinclair	10.00
	Z88 Magic	Kuma	16.00
	Z88 Pipedream	Dabs	16.00
	Z88 Real Power Computing	F.R. Flaig	12.00
	Z88 Reference Manual	M-Tec	16.00
	Z88 Software Developers Guide	Cambridge Comp.	40.00
	Using your Z88	Patrick Hall	10.00

● ALL PRICES INCLUDE VAT WE EXPORT WORLDWIDE ●

Phone for details of other products OR send SAE for our latest catalogue
Credit card phone orders accepted, or send cheques, postal orders, Eurocheques

Postage Charge

UK £2.50

EUROPE:

£8.00 Software/Books

£15.00 Hardware

WORLDWIDE:

£12.00 Software/Books

£24.00 Hardware

EXPORT TERMS: DEDUCT 10% FROM ALL PRICES QUOTED EXCEPT BOOKS



Competition Entry - Ideas for the new Z88.

R.B.Jordan and K.P.O'Donnell,
Ruakura Agricultural Centre,
Private Bag, Hamilton,
NEW ZEALAND.

While we believe that the concept of the Z88 is excellent, we feel that it has some major deficiencies in the areas listed below. Most of these could be implemented as tweaks without creating an entirely new computer, and thus would maintain compatibility with the Z88 itself. In this respect the case and outward appearance of the computer could remain the same.

Our suggestions are based on our personal experiences with the Z88 as software and hardware developers over the last two and a half years, and also from feedback from the 100 or more owners that we have supplied hardware and software to. Most of these users are within our Ministry and we have interacted with them extensively.

The suggested major changes to the Z88 in order of priority are:

1. Development system.

The lack of any development system we believe has been a major disincentive for would-be developers of Z88 software.

While we have been promised an assembler based development system from Cambridge, and we understand that a C development is used by Ranger, to date these have not been generally available. This has meant that we have had to develop our own BBC BASIC based development system. Others have also developed their own systems.

Our system could be made available to others but would need some tidying up. It's major advantage is that it integrates fully with the Z88, and in fact uses a Z88 as the development platform. Full access to HELP and normal linkages to other applications is provided. The debug cycle in the development system is about 1 minute for a system comprising 80k of BASIC and machine code in up to five sections chained together from either an EPROM, or a 128k RAM configured as an EPROM. Other applications such as PCLink II and RangerLink can be automatically incorporated onto the EPROM. Transfer of all files to and from a PC or Mac can be conveniently performed to allow major edits, printing, archiving and other tasks to be completed.

2. Screen.

We believe that the 8 line screen fulfils the function that the Z88 was designed for. However, the limitation with the existing screen is its readability. This might be improved by increasing the character size, and perhaps altering the contrast ratio. Both of these would be achievable with a screen of practically the same size as at present by either of the two options below.

- a. **Increased pixel size - No software change.** Character size could be altered by using a screen with the same number of pixels but increasing pixel size by 8% to 10%. This may require the position of the OZ window at the extreme right to be moved below the screen proper, and some of the redundant areas at the sides and below the screen to be eliminated.
- b. **Same screen configuration - Two display modes.** Have an alternative font or display mode based on a 10 by 8 pixel grid rather than the 8 by 6 as at present. This would allow a character some 30% larger while still allowing the existing screen to provide 80 characters by 6 lines if the map and menu area were overrun. The mode would need to be toggleable so that the map could be obtained when required for page layout and editing. The menu could then be implemented as a Pulldown.

3. Wordprocessor.

Pipedream is not a true wordprocessor, but in fact comes very close to it for most users needs. Only a few changes would be necessary to make it a very acceptable wordprocessor. The only problems that we see with Pipedream in wordprocessor mode are the function of the TAB key, and the way that words wrap (or in fact unwrap).

If Pipedream could be placed in a wordprocessor mode, using the options page, perhaps as the default option, the above two problems could be fixed.

Thus, whenever the TAB key were pressed the system would insert the appropriate number of spaces to move the cursor to the next TAB stop. There would also need to be a way of indenting the left sides of paragraphs using perhaps the concept that currently allows the right hand margin and wrap widths to be set.

In wordprocessor mode the delete key would automatically unwrap text over the current paragraph, and also the left arrow key would move back to the previous line as it now does using SHIFT-Left-arrow. This cursor move would seem very easy to implement.

As an alternative to the above, a separate wordprocessor could be incorporated using much of the code that is already in Pipedream.

4. Comms package.

Although PCLink II is perfect in its simplicity and that it can be used for both PC and Macintosh interfaces, the 50 to 100 characters per second transfer rate is far to slow. Products available to transfer data between PC's and laptops work at phenomenal rates, and this suggests that work to increase the speed of PCLink II by at least a factor of 5 to 10 is needed. The difficulty with PCLink II is the need to return a character each time one is received. This supposedly increases reliability of the transfer, but in fact a glitch on the line can corrupt the data without the system detecting it. A protocol that squirts the data and then sends a checksum character would be much faster, and provide a much more reliable transfer.

The new Link package should be built into the Z88. Also software at the PC or Mac level should be upgraded to allow full multiple file transfers and various archiving options such as updating all changed files. Conversion on the fly should be maintained on the Mac and incorporated into the PC program. A Wordperfect conversion should be produced for the PC.

5. On board RAM.

128k RAM on board, i.e. in slot 0, is the absolute minimum. As well, users should be able to optionally purchase, or perhaps upgrade to, 512k in slot 0.

6. Housing.

The housing in its current shape is perfectly adequate, but it is preferable to change to a much lighter colour to minimise the heat buildup when exposed to the sun. This can occur when in use in the field, or when left in cars etc.

7. Flash EPROM.

Flash EPROM seems to be the memory of the future and should be provided for in the Z88 as an alternative to normal EPROM in slot 3. This allows resaving of files potentially, although some file structure changes would be needed.

Flash EPROM and EPROM might well be integrated better into the filing system. The Psion Organiser achieves this in a tidy way.

8. Outlining Package.

Incorporation of an outlining package with the basic features of MORE on the Macintosh would be ideal in the limited screen environment of the Z88. This allows sections of the text to be collapsed down into their headings and rearranged easily. In fact this might be the basis for the alternative wordprocessor package alluded to above.

9. BASIC Editor.

This is absolutely necessary to anybody writing more than 2 lines of BASIC. Ideally it would be a full screen editor like Pipedream, but a line editor based on the *EDIT module provided by Richard Russell would be adequate.

10. More HELP.

Only Pipedream and perhaps Index have anything like a complete help facility in a computer that is extremely well designed to allow help systems. All other packages supplied with the basic machine should provide help!

11. RS232c Port changes.

It would be extremely useful for us, and we believe others, if Pin 9 on the RS232c port could source more like 30mA to power external peripherals connected to the computer. We understand that some suppliers actually modify the Z88 to allow this.

It would really be nice if pin 6 on the RS232c port could be controlled from software in a more predictable way than the RTS line which suffers from strange glitches during power up and down and when receiving data. This would allow the Z88 to control peripheral circuitry.

The lack of 4800 baud has caused us difficulty in one project.

12. Backstepping in menu.

It should be possible to move backwards through the menus. One possibility is for the key pair SHIFT MENU to allow backstepping.

13. Bug fixes.

A list of minor bugs in the Z88 operating system, BBC BASIC, and in Pipedream is provided below. Fixes for these should be incorporated in the new version.

- a. More rapid switching between activities. When moving from one BASIC to another the switch time is three seconds. This seems excessive?
- b. Allow HELP text to contain tokens that are defined in other places. The developers notes say that the token &E1 can be used for an ENTER symbol, but this does not work unless the help is traversed directly from one of the standard Z88 applications. This suggests an inconsistency in the appearance of the display from the HELP function depending on the application that was suspended to invoke HELP.
- c. Pipedream will remove a column that has its width set to zero, and it cannot be recovered easily.
- d. The CLI command in BASIC does not work if it resides in segment 2 of memory. This means that the line editor recommended in the application notes does not work for large programs unless it is changed to an OSCLI command.
- e. The BBC BASIC Assembler should be improved so that it detects duplicate labels, and all invalid instructions.

- f. User defined screen characters should be saved across applications. If one application defines its own set of user characters, and the operator preempts to another application that redefines the keys then the first application will have had its keys redefined when the operator returns to it.
- g. BBC BASIC's Renumber command should be able to renumber a small section of a program if required. e.g. `RENUMBER 1000,10,1000,2000` should renumber the code between lines 1000 to 2000 to the new sequence 1000,1010,1020 etc.
- h. The BBC BASIC command `LIST IF` should be fixed to work more consistently, and should be documented.
- i. The difficulty with `:RAM-` and `S.SGN` files during a soft reset must be fixed. The fix is known to Cambridge, and is installed in some machines so should be installed in all.
- j. A method of listing a BASIC program to a named file on a named device should be documented or implemented. I've tried to do this to avoid the previous problem and I've failed?
- k. Listing Assembler comment lines containing keywords such as `FOR`, `NEXT`, `REPEAT`, and `UNTIL` modify the indent level of the listing. Indent control should be `Off` during assembler listing, or at least a more intelligent lister incorporated. e.g. the following assembler lines list like this

```
RET
\
\ WAIT FOR READY
\
\ LD HL,0
```

- l. BBC BASIC should work for `VAL(&23)`.

Protect your investment with...

The Cambridge Topper

Our unique lightweight tough keyboard cover protects the Z88 from dust and scratches, and guards all your valuable work against accidental battery drain caused by keyboard pressure.

Latest 100g version 1.5mm thin: stronger yet still fits inside standard Cambridge padded bag.

Order yours now at £9.50* all inclusive – delivery by return.

*UK only. Airmail to Europe £11, elsewhere £13.50. Also available from leading Z88 dealers.

Wordworks Ltd

WORDWORKS LTD, 49 OLNEY ROAD, EMBERTON,
OLNEY, Bucks MK46 5BU. Tel/Fax: 0234 713757

PipeDream

PipeDream is now available for the IBM PC and compatibles, and the Acorn Archimedes. It has been completely rewritten for these computers and contains many new facilities, whilst retaining complete file and keyboard compatibility with the Z88.

PipeDream on the PC or Archimedes makes the ideal companion for your Z88. With just a connecting lead and the PC LINK II EPROM you can load files directly from the Z88 filing system into PipeDream on the other computer and continue working with no loss of information. Now you can use PipeDream on the computer in your home or office as well as using it in the Z88.

New features of PipeDream on the PC and Archimedes include:

- ◆ up to 8192 columns and over 500,000,000 rows (depending upon your computer's memory size)
- ◆ mail-merge
- ◆ function keys
- ◆ complete keyboard reprogrammability
- ◆ foreign character editing and printing
- ◆ linking files
- ◆ financial functions
- ◆ database functions
- ◆ LOTUS file load and save
- ◆ user defined colour displays

PipeDream for the IBM PC and PipeDream for the Acorn Archimedes costs £99 + VAT.

For more information or to order PipeDream call us on 0954 211472 or write to us at Colton Software, Broadway House, 149-151 St Neots Road, Cambridge CB3 7QJ. Access and VISA telephone orders welcome.

PipeDream - power at your fingertips



**The
BBC BASIC(Z80)
Reference Manual
for the Z88**

Now available;

the BBC BASIC(Z80) Reference Manual for the Z88

The subjects covered include:

General Information about BBC BASIC(Z80)

Assembler Language

Statements and Functions

The Screen Driver

The Operating System Interface

Printing

BBC BASIC(Z80) Files

Mathematical Functions

Error Messages and Codes

The Format of Program and Variables in Memory

Price £14.50 + £2.00 p&p

Available from M-TEC

ISBN No 1 871895 00 6

Competition Entry

Memb No. 1396
P.I. Nicholson
12 Ferrinvequire
Glendale
Dunvegan
Isle of Skye
IV55 8WN

Hardware improvements

Increase size of internal ram - 64K minimum, ideally 128K
Bigger display, at least an extra eight lines. (I realise this may be an impossible wish, due to the availability of a display at that particular size, and in theory it would also cost twice as much.)

Include an internal memory socket for additional ram or rom. Visible to the user as Card 4 in the card menu. Opening the Z88 to incorporate additional memory would have to be done by an approved dealer. Alternatively, a special lid could be incorporated on the underside of the Z88.

Selling the Z88 as a word processing package, it would be an idea to include a spelling checker plugged into the socket. As well as using existing eproms, the new Z88 should be able to save and retrieve data on E²prom technology (i.e. like the Psion range of portable computers).

Improved powersaving techniques to extend battery life.

The inclusion of an onboard internal battery that is automatically charged, by the main batteries/powersupply. The battery should preserve internal memory, no matter how low the voltage of the main batteries are. This inclusion would also allow a more leisurely pace when replacing flat batteries.

Include a built in parallel port. To save space use a smaller connector than a standard centronics.

An ergonomic point - the foot underneath the Z88 is fine, but a slightly raised display would be a complementary addition. (much easier on the lap too !)

Software improvements

Pipedream

In Pipedream, there should be more advanced facilities, to cut and paste documents. I.e. select easily, portion of text without having to fiddle about with slot areas. Ideally user should be able to mark start and end positions, of lines to be moved. Reduce the time it takes to search and replace words. An extra option to complement the reformat paragraph option, would be to include a reformat block option.

The WYSIWIG concept of Pipedream needs improving. I.e. superscript and subscript letters should actually be displayed on the LCD screen, and will only be shown with their control codes when editing that line.

Terminal

Replace existing terminal with more advanced terminal (say VT100). Include built in facilities for communicating with modems.

Incorporate Import-export application with terminal, and allow options for file transfer using ASCII protocol or Xmodem.

Calculator

Increase the specification of the pop up calculator. Add scientific operations such as sin, cos, tan etc. Extend conversion table i.e. as well as converting from one unit to another, how about a binary to decimal to hex option? (saves having to go into Basic.)

Filer

Incorporate a function to calculate, how much (even roughly) memory is left in each ram device.

An additional command is needed to catalogue eproms and show the length in bytes of each file held. An option to show the amount of free memory available in eprom would also be useful. Include an option to compress files, to make efficient use of ram.

Index

A special command to backup all the suspended activities.

A function to kill all suspended activities. This would differ from purge, in that it would not reset the panel etc.

Printer editor

Increase the number of possible translations. I.e. 52 translations would be enough to change a complete alphabet, both upper and lower case.

Miscellaneous

Incorporate the Wordmongers Ztape software in internal rom. This would allow for back up storage via the serial port to cassettes.

The inclusion of official graphics routines in Basic.

An option which necessitates the user to enter a password at switch on. Alternatively, enable the Z88 to boot from a ram boot.cli file or eprom. This could be set from within the Panel.

Provide save defaults in different applications. E.g. While in the printer editor, saving as eponfx, would automatically give eponfx.prt .

The ability to change sound/volume of key click.

Of course, all the known bugs should be removed (if possible), especially the files in 'ram.-, crash on reset' problem.

Finally, have some sort of stack which remembers order when calling popdowns. So that for example, looking at the calendar, then the calculator, and then escaping from calculator, one is not put back to an application or index, but to the previous pop down.



THE MUSIC SUITE LTD.

The Music Suite Ltd, Cenarth,
Newcastle Emlyn, Dyfed SA38 9JN.



Credit Card Hotline: (0239) 710594

FAX: (0239) 711343

THE Z88 - LINK II

- FULL REMOTE CONTROL OF THE Z88 WITHOUT AN EPROM
- ADVANCED BATCH PROCESSING ON ALL FUNCTIONS
- ARCHIVAL OF ALL Z88 FILES ONTO DISK (INC. FULL BACKUP) WITH VERIFY OPTION
- CONVERTS PIPEDREAM FILES FOR WORDPROCESSOR USE (USING THE RESULTS OF FORMULAE RATHER THAN THE EQUATIONS)
- CONVERTS PIPEDREAM FILES TO WORK WITH DATABASES OR LOTUS 1-2-3 COMPATIBLE SPREADSHEETS
- PRINT PIPEDREAM FILES ONTO ANY PRINTER CONNECTED TO THE HOST COMPUTER'S PARALLEL PORT
- PRINT FULL Z88 DIRECTORY ONTO PRINTER

AVAILABLE NOW FOR: ATARI ST's, PC COMPATIBLES and AMIGA's

Each program comes on disk, with a cable and manual for £34.95

(PC version comes on both a 3 1/2" and 5 1/4" disk)

Registered owners of the Z88-ST Link or Z88-Amiga Link can update to the Z88-LINK II for £10

Please make cheques/PO's payable to: **THE MUSIC SUITE LTD.**

You can also pay on credit card (Access/Visa) by FAX (0239) 711343 or phone (0239) 710594.

42 Charles Avenue
Harrogate
North Yorkshire
HG1 4PE

Dear Sir/Madam

Z88 User Competition

I am a Catering Manager in the NHS, I am 36 Years Old and I bought one of the earlier models of Z88 (No072-000611) which has so far served me extremely well. In particular I use it for my Diary at work and for notes at college.

I have decided to split the suggestions into two sections (& all in note form) for simplicity :-
ie Hardware & Software.

HARWARE

- 1/Overall design - Leave the overall dimensions of any new model the same. If people want a larger laptop or smaller pocket computer there are plenty of others already on the market!
- 2/Storage media/memory - Larger than 32k built in memory. Hardware compatability with current RAMS, ROMS & EPROMS would be desirable.
- 3/Keyboard - Leave well alone, the keyboard is good & is QUIET!!! this is particularly useful in college and taking minutes at meetings etc.
- 4/Screen - A larger screen which should be backlit
- 5/Extra Protection -
Some form of protection for the keyboard/screen (like the "Topper") to be built in.
- 6/PORTS -
RS232 (leave)
Centronics Printer port
- 7/Durability - Sturdier screen cover & "legs" (mine have both suffered slightly over the years).
- 8/Batteries - Longer battery life or fewer batteries.
Flip up battery cover, have you ever lost the cover on the floor when changing the batteries?
- 9/Optional Extras (ie available at a higher price)

i/Connector for Monitor/Television (if practicable)

ii/Built in Modem (again if practicable)with socket for connection to BT type phone socket.

iii/Disc Drive Socket - for industry standard unit.

iv/Built in "NiCads"

v/Optional larger built in memory ie standard 128k? optional 512k

SOFTWARE

1/Compatability - Downwards compatability with Current Z88 Software. pipedream documents, spreadsheets, Basic Programs etc. It is likely that users will have a collection either on EPROM or stored on disc on another machine.

2/Help - an extended help file (as was originally hoped for)

3/Diary - please add a function that will automatically carry forward to the following day "To Do Notes".

Better text editing facilities when in the Diary ie reformatting paragraphs.

4/Pipedream -

Please add a facility to allow the left margin to be moved without having to use the "tab" function (which takes you to the next column). This will allow text files that have indents (ie reports) which will not be lost when transferring the file to another computer

Simple graphics which can print out bar charts from spreadsheet information.

5/Terminal - Built in terminal software ie for telecom gold, prestel etc

6/Basic - Graphics and better editing facilities

7/Project planner - ie like ThinkZ or "Project Manager" on QL

8/Database - Simple & easy to use like "Flashback" (Sector Software) on the QL Alternatively make it easier to use in Pipedream.

9/Text string finder for files - like "Ferret" (Sector Software) on the QL.

10/MS Dos compatibility - This would not be needed for a lot of users who accept the machine for what it is but these magic words would probably help to increase potential market share.

What would be useful would be some form of converting software files from the host computer (ie Lotus 123) for use on the Z88.

11/Alarm - Sound sampling or phonetic device (like Currah Microspeech to allow short messages to be stored/written for later recall (like BT pagers). Obviously memory intensive but could be useful. This could also be used as an answering machine ie like the Merlin Tonto Computer.

12/manual with more information, the original one was lacking in some areas. Also technical manual to be available from day 1 for third party software developers.

13/Option to be an Alpha Tester of new unit if any of these suggestions have been useful!!!!!!!!!!!!

Wordmongers Ltd.

2 Silverdale Close, Penn, Bucks. HP10 8JP. Tel 049 481

Last summer, the debate was on whether Z88 suffered from heat or not. This time, with the deep snow at the time of writing, I suppose the question has to be what effect the cold on Z88. My extensive survey, completed with the help of Tim, our 10 year old, has conclusively proved that the Withered Toad has no sensitivity to temperature.

THINKz upgrades.

There are two ways of getting your THINKz software upgraded. Option 1 is to return your eprom to me with #2, to cover P & P. I will reblow the eprom and return it to you as quickly as possible. So far I have managed to turn round these ROMs within a couple of days.

Option 2 is to use the Z88 user club ROM consolidation service offered by Steve Marsh. His Mega chip service is designed to integrate any application ROMs you have onto a single ROM. As he stated in the last edition of EPROM, Wordmongers has given him permission to incorporate any Wordmongers software onto Mega Chips. Naturally, there are a number of rules governing the issue of our software and Steve has agreed these rules. They were described in the last edition.

As part of any mega chip production, Steve will automatically upgrade THINKz to version 1.2. He will not be upgrading Z-Term or zBASE. This is because Z-Term 2.4 works better with a couple of modems than version 2.5. Therefore, you will get back the version of Z-Term which you send in.

With regard to zBASE, V1.2 is the main version. The latest version is 1.3. The only changes to 1.3 are as follows.

1. ESCAPE OFF. Escape can be set off to prevent users doing things the programmer doesn't want. The problem with this is that if the program hangs with ESCAPE OFF, zBASE will have to be KILLED. This can damage data files and should therefore be avoided. If you are not developing applications for other users, SET ESCAPE OFF is not needed.
2. The second difference is that the LTRIM() function has been fixed.
3. Finally, when QUITTING from zBASE, the command immediately returns control to the INDEX MENU without an additional key press.

GAMES.

The success of GOLF has tempted us to look around for other games. We have received one new game which we are evaluating and hopefully there will be an announcement shortly. We are looking towards a Games Superchip with GOLF and other games all on a single chip. You'll be the first to hear.

Don't forget to put the Club Day in your diary. See you in June.
Tony.

Product Enquiries: Please Call 030381

CLUB BINDERS

MADE FROM DURABLE GREY PVC MATERIAL, WITH "Z88 EPROM" PRINTED IN BLUE ON THE SPINE, AND THE CLUB LOGO ON THE FRONT. EACH BINDER WILL HOLD UP TO 15 ISSUES.

Prices: £5.95 each.
£10.95 for two.

INCLUDING U.K. POST & PACKING. OVERSEAS PLEASE ADD £5.00 EXTRA POSTAGE.

Please send Cash With Order to: Z88 Users' Club,
68, Wellington Street, Long Eaton, Nottingham. NG10 4NG

New ! From the Z88 Users'
Club Spares Service

Z88 DEVELOPERS' NOTES

EVERYTHING YOU EVER WANTED TO
KNOW ABOUT THE WORKINGS OF THE Z88
COMPUTER - AND SO MUCH MORE!

Special
Members' Price: **£37.50**

INCLUDING U.K. POST & PACKING. OVERSEAS PLEASE ADD £5.00 EXTRA POSTAGE.

Please send Cash With Order to: Z88 Users' Club,
68, Wellington Street, Long Eaton, Nottingham. NG10 4NG

Small Ads & Swapshop

This service is FREE to members. Please send your Ad to the club Address on page 2. Please keep them as short as possible, and be sure to state whether the items are WANTED or FOR SALE, or if the ad is for a CONTACT.

****FOR SALE****

Z88 + 128K RAM AND USER GUIDE IN ORIGINAL CARRY CASE, MAINS ADAPTER, CENTRONICS PRINTER INTERFACE & LEAD. ALL IN GOOD CONDITION - £160 + POSTAGE. CALL ALAN DAVIES ON 0202 672629.

****FOR SALE****

Z88'S BREAKING FOR SPARES. EG. DISPLAY "TESTED" £20 + P&P. TEL 0928 581429

****FOR SALE****

Z88, MANUAL, BBC LINK & SOFTWARE, PARALLEL CABLE, RECHARGEABLE BATTERIES AND FAST CHARGER, MAINS ADAPTER, 128K RAM, BOOK, ALL BACK ISSUES OF Z88 EPROM, ALL IN VERY GOOD CONDITION. £200 ONO. ALSO FOR SALE, ELECTRON, PLUS 1, JOYSTICK INTERFACE, 45+ MAGAZINES, 30+ GAMES, VIEW WORDPROCESSOR CARTRIDGE, £160 ONO. PHONE 0993 891368 (EVES)

****WANTED****

128K RAM IN REASONABLE CONDITION. PHONE MAX ON 0273 608038.

****FOR SALE****

Z88, 128 RAM, MAINS ADAPTER, CASE, (9 MONTHS OLD) - £150. 512K RAM CARD - £125. PARALLEL CABLE - £20. POCKET MODEM - DATATRONICS 1200P WITH CABLES AND COMM-88 SOFTWARE - MINT - £125. Z88 MANUAL - £5. Z88 MAGIC - £8. Z88 A DABHAND GUIDE - £8. 23 COPIES OF Z88 EPROM - £10. TEL/FAX KEITH ON 0704 532729.

****FOR SALE****

128K RAM, 32K RAM, 32K EPROM, PARALLEL PRINTER CABLE, SOFT CASE, REASONABLE OFFERS PLEASE. PHONE 081 668 5891.

****WANTED****

WORDMONGERS ZTAPE PACKAGE. PLEASE CONTACT IAN ON 047081 385.

****FOR SALE****

PC PIPEDREAM, BOXED WITH ORIGINAL MANUAL, £55. TEL: PHILIP ON 0274 872350.

****FOR SALE****

EPSON FX1050 WIDE CARRIAGE PRINTER £300, 2 X Z88 MAINS ADAPTERS £5 EACH, PARALLEL CABLE £15, PC LINK & CABLE £15, COMPLETE Z88 EPROM £10, "Z88 REAL POWER COMPUTING" BOOK £5, UPDATED MANUAL £5. CONTACT JOHN ON 081 840 4417.

****FOR SALE****

WORDMONGERS GOLF GAME - £20. I ALSO WISH TO SWAP A COPY OF THE DEVELOPERS' NOTES VERSION 2.0 FOR THE EARLIER VERSION 0.93, WHICH GIVES A FULL LISTING OF AN EXAMPLE APPLICATION. CONTACT BRIAN BLACKETT AT FLAT 3, 47 PARK ROAD, ST. ANNES ON SEA, LANCS. FY8 1PW.

****FOR SALE****

ONE CITIZEN 120D PRINTER - BOXED, WITH TWO RIBBONS - £80. Z88 COMPUTING BOOK £6, Z88 PIPEDREAM (DABHAND) £8. ANYONE INTERESTED IN A SUB-GROUP IN GLASGOW? TEL: EUAN ON 041 334 1209.

NEXT ISSUE OUT MID-MARCH

ALL CONTENTS ©1991 Z88 USERS' CLUB

ALL TRADEMARKS ACKNOWLEDGED

Z88 EPROM is printed on recycled paper

HiTEK Marketing

72 Longmoor Lane, Breaston, Derby. DE7 3BB

STAR BUY OF THE MONTH

Heavy Duty Topper Cover - £8.50 For all orders received by 31st March 1991

Books Z88 PipeDream -
A Dabhand Guide £14.95
Z88 Magic £14.95

PC Link II - £34.00

Please state whether 9 pin to 25 pin cable or 9 pin to 9 pin cable is needed

Canon BJ-10e Bubble Jet Printer

Near laser quality printer, including mains adapter & ink cartridge £325.00
Rechargeable Battery Pack £45.00
Optional Sheet Feeder £60.00
Extra Ink Cartridges £20.00

Wordmongers Software

zBASE £69.00
ZTerm £50.00
ZTape £50.00
EAzY Money £69.00
Golf £25.00

**** Z88 All-In-One Pack****

Consists of: Z88 computer, 128k RAM pack, mains adapter, carrying case, batteries - £280.00

Ni-Cd Battery Holder

To run your Z88 on low-cost rechargeable batteries.

Battery Holder for 5 cells - plugs into your Z88 - just £4.95
5 Quality Rechargeable Batteries - £6.95. Charger - £7.95
SAVE £1.90 on complete kit of Holder+Batteries+Charger - ONLY £17.95

Z88 Computer	£229.95	Parallel Cable	£29.00
Mains Adapter	£10.00	Serial Cable	£10.00
32k RAM Pack	£20.00	Topper Cover	£9.50
128k RAM Pack	£50.00	Carrying Case	£10.00
512K RAM Pack	£200.00	BBC Link	£23.00
32k EPROM Pack	£20.00	Atari ST link inc lead	£34.95
128k EPROM Pack	£50.00	Spellmaster	£56.00
EPROM Eraser	£40.00	SqueeZ'88	£45.95

Z88 Users' Club EPROM vouchers given with all the above except Star Buy of the Month. One voucher worth £1.00 for each complete £50 spent per order. Vouchers are valid for one year and can be used to join the Club or to renew membership, or towards any future orders.

Please add 50p per order part P&P. UK despatch only. Cash with Order.

Proprietor D. R. Woodward. Not registered for VAT.